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EXAMINER	
LEUNG, CHRISTINA Y	
ART UNIT	PAPER NUMBER
2633	5

DATE MAILED: 06/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/536,020	ASWOOD SMITH, PETER	
	Examiner	Art Unit	
	Christina Y. Leung	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 March 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☒ Claim(s) *1 and 11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 March 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Priority

1. If applicant desires priority under 35 U.S.C. 119(e) based upon a previously filed copending application, specific reference to the earlier filed application must be made in the instant application. This should appear as the first sentence of the specification following the title, preferably as a separate paragraph. The status of nonprovisional parent application(s) (whether patented or abandoned) should also be included. If a parent application has become a patent, the expression "now Patent No. _____" should follow the filing date of the parent application. If a parent application has become abandoned, the expression "now abandoned" should follow the filing date of the parent application.

Claim Objections

2. Claims 1 and 11 are objected to because of the following informalities:

In claim 1, the word "locally" in line 4 of the claim should be changed to "local."

In claim 11, the word "comprising" in line 2 of the claim should be changed to "comprises."

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 recites "mapping the label based on the second wavelength; and forwarding to the source the label mapped with the second wavelength" in lines 7-9 of the claim. Examiner notes that although claim 8 appears to be directed to an apparatus, the limitations of "mapping" and "forwarding" in the claim are method steps, not elements in an apparatus. Therefore, it is unclear whether the claim as a whole is directed to an apparatus or to a method. Examiner respectfully suggests that the limitations be amended to recite elements or means for "mapping" and "forwarding."

Claim 8 also recites "the source" in line 8 of the claim. There is lack of antecedent basis for this limitation.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-3, 6, and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al. (US 6,111,673 A) in view of Ohba et al. (US 6,501,754 B1).

Regarding claim 1, Chang et al. disclose a label switching routing method for a multi-protocol label switching (MPLS) optical communications network, comprising:

attaching a wavelength to each label (column 9, lines 16-29);

establishing a datapath as a sequence of local wavelength labels between a source and a sink in the optical communications network (column 12, lines 30-67; column 13, lines 1-60); and

converting a first wavelength to a second wavelength and forwarding the traffic to the sink according to the datapath (column 8, lines 20-50; column 15, lines 8-24).

Chang et al. disclose that the label is mapped with the second wavelength (the label also has a certain wavelength and therefore may be converted to a second wavelength along with the data; column 13, lines 38-42). However, Chang et al. do not specifically disclose transmitting the label to the source.

Ohba et al. teach that in network utilizing label switching, the label may be transmitted back to a source node to indicate that the transmission to the next node was successful (column 8, lines 41-67; column 9, lines 1-67; column 10, lines 1-25). It would have been obvious to a person of ordinary skill in the art to transmit the label to the source as taught by Ohba et al. in the system disclosed by Chang et al. in order to provide feedback to the source and promptly detect failures (and also situations in which the signal is routed through a loop) in the network.

Regarding claim 2, as discussed above with regard to claim 1, Chang et al. disclose that the label may have a wavelength. They further disclose that the label may include several sections in timeslots (Figure 6 shows how a label may have two sections, 615 and 616, which each occupy a timeslot).

Regarding claim 3, since the label, which is a serial signal, contains sections such as shown in Figure 5 with different lengths, the timeslots disclosed by Chang et al. may therefore have "variable size" (that is, one section may be longer and occupy a larger timeslot than another).

Regarding claim 6, Chang et al. disclose that the step of establishing a datapath is controlled by the multi-protocol label switching (MPLS) protocol (column 3, lines 60-67; column 4, lines 1-29).

Regarding claim 8, as well as it may be understood with regard to 35 U.S.C. 112 discussed above, Chang et al. disclose an optical cross-connect (OTXC) for providing wavelength to wavelength conversion in a multi-protocol label switching (MPLS) optical communications network, comprising:

means for attaching a wavelength to the label (column 9, lines 16-29);

means for converting a first wavelength associated with an incoming signal into a second wavelength associated with an outgoing signal (column 8, lines 20-50; column 15, lines 8-24); and

means for mapping the label based on the second wavelength (column 13, lines 38-42).

Again, Chang et al. do not specifically disclose means for transmitting the label to the 4source. However, Ohba et al. teach that in network utilizing label switching, the label may be transmitted back to a source node to indicate that the transmission to the next node was successful (column 8, lines 41-67; column 9, lines 1-67; column 10, lines 1-25). It would have been obvious to a person of ordinary skill in the art to transmit the label to the source as taught by Ohba et al. in the system disclosed by Chang et al. in order to provide feedback to the source and promptly detect failures in the network.

Regarding claim 9, Chang et al. disclose that the means for converting are controlled by the multi-protocol label switching (MPLS) protocol (column 3, lines 60-67; column 4, lines 1-29).

Regarding claim 10, Chang et al. do not specifically disclose statistical multiplexing, frequency division multiplexing, and time division multiplexing. However, it is common knowledge that the capacity of an optical network may be expanded by multiplexing the optical signals. Chang et al. already disclose the network may incorporate signals of different protocols and types (column 4, lines 22-28). It would have been obvious to a person of ordinary skill in the art to include multiplexing means for providing various forms of multiplexing in the system suggested by Chang et al. in view of Ohba et al. in order to expand the capacity of the network. It also would have been obvious to a person of ordinary skill in the art to provide the multiplexing under the control of the MPLS protocol in order to properly incorporate and control the multiplexed signals in the MPLS protocols already suggested by Chang et al. in view of Ohba et al.

7. Claims 2-5 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al. in view of Ohba et al. as applied to claims 1 or 8 above, and further in view of Taylor (US 5,938,309 A).

Regarding claims 2 and 3, Examiner notes that the claims have been already rejected over Chang et al. in view of Ohba et al. based on a particular interpretation of the claims. Alternatively, although Chang et al. disclose a "timeslot" in the labels they disclose, Chang et al. do not specifically disclose time division multiplexing the labels with each other. However, it is also common knowledge that the capacity of an optical network such as disclosed by Chang et al. may be expanded by time division multiplexing the optical signals. Regarding claim 2 in particular, Taylor teaches that in a time division multiplexed network, signals are necessarily assigned timeslots in order to combine them in the time domain (column 1, lines 25-32). It would

have been obvious to a person of ordinary skill in the art to assign timeslots as suggested by Taylor to the labels in the system described by Chang et al. in view of Ohba et al. in order to time division multiplex them with other signals and provide the additional capacity in the network.

Regarding claim 3, Taylor further teaches that signals in an optical network may have different bit rates and therefore, timeslots of variable sizes in accordance with the speed of the signal (column 3, lines 29-62). Chang et al. already discloses that the system may incorporate signals with different bit rates (column 4, lines 22-27). It would have been obvious to a person of ordinary skill in the art to have timeslots with variable sizes as taught by Taylor, in the method suggested by Chang et al. in view of Ohba et al. and Taylor, in order to properly allow the network to accommodate signals having different bit rates.

Regarding claims 4 and 5, Chang et al. do not specifically teach splitting a label or combining two labels, although, again, they do disclose that the network may include signals having different bit rates. Taylor further teaches that signals with different bit rates may be converted so that they are compatible with other signals in a particular part of the network. In particular, Taylor teaches that a signal may be split into multiple outgoing signals and that multiple signals may be combined into one signal (Figure 1 shows a signal from an OC-192 transmitter, for example, being split into four corresponding OC-48 signals, and conversely, four OC-12 signals being combined into one OC-48 signal). It would have been obvious to a person of ordinary skill in the art to further include splitting or combining the labels as taught by Taylor in the method suggested by Chang et al. in view of Ohba et al. and Taylor in order to properly

accommodate signals of different bit rates in the network by making them compatible with each other as necessary.

Regarding claim 11, Chang et al. do not specifically teach assigning timeslots, but it is common knowledge that the capacity of an optical network such as disclosed by Chang et al. may be expanded by time division multiplexing the optical signals. In particular, Taylor teaches that in a time division multiplexed network, signals are necessarily assigned timeslots in order to combine them in the time domain (column 1, lines 25-32). It would have been obvious to a person of ordinary skill in the art to include means for assigning timeslots as suggested by Taylor to the signals flowing back to the source in the system described by Chang et al. in view of Ohba et al. in order to time division multiplex them with the other data signals and provide the additional capacity for those signals flowing back to the source.

Regarding claim 12, Taylor further teaches that signals in an optical network may have different bit rates and therefore, timeslots of different sizes in accordance with the speed of the signal (column 3, lines 29-62). Chang et al. already discloses that the system may incorporate signals with different bit rates (column 4, lines 22-27). It would have been obvious to a person of ordinary skill in the art to have timeslots with variable sizes as taught by Taylor, in the system suggested by Chang et al. in view of Ohba et al. and Taylor, in order to properly allow the network to accommodate signals having different bit rates.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al. in view of Ohba et al. as applied to claims 1 and 6 above, and further in view of Lee (US 6,556,544 B1).

Regarding claim 7, Chang et al. do not specifically disclose statistical multiplexing, frequency division multiplexing, and time division multiplexing. However, it is common knowledge that the capacity of an optical network may be expanded by multiplexing the optical signals. Chang et al. already disclose the network may incorporate signals of different protocols and types (column 4, lines 22-28). It would have been obvious to a person of ordinary skill in the art to include multiplexing means for providing various forms of multiplexing in the system suggested by Chang et al. in view of Ohba et al. in order to expand the capacity of the network. Chang et al. do not specifically disclose a constrained routing label distribution protocol, but such a protocol is known in the art as a choice of a service resource allocation protocol, as Lee et al. teaches (column 1, line 58-65). It also would have been obvious to a person of ordinary skill in the art to provide the multiplexing under the control of a constrained routing label distribution protocol as taught by Lee et al. in order to properly incorporate and control the multiplexed signals in the MPLS protocols already suggested by Chang et al. in view of Ohba et al.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Y. Leung whose telephone number is 703-605-1186. The examiner can normally be reached on Monday to Friday, 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 703-305-4729. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

JASON CHAN
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